

## CLIMATE 101: WHAT ARE FOSSIL FUELS?



### THE BASICS

Fossil fuels are non-renewable fuels such as coal, oil, and natural gas formed in the earth over hundreds of millions of years from the buried remains of plants and animals. Fossil fuels are burned to generate heat and electricity. **But burning fossil fuels also releases greenhouse gases like carbon dioxide.** These gases trap extra heat in the atmosphere, causing global temperatures to rise and our climate to change.

### QUICK FACTS

- Burning fossil fuels is *the number one cause of climate change*. The greenhouse gases we release while burning them do [far more](#) to disrupt our climate than any natural factors.
- [According to a 2015 report](#), globally, taxpayers subsidize fossil fuels to the tune of \$5.3 trillion every year. That's your tax dollars (or euros, pounds, rupees, and more) going to subsidize [some of the world's most profitable companies](#).
- Major economies are shifting away from fossil fuels – and thriving. For example. [the UK generated half of its electricity without fossil fuels in 2018](#).

### THREE EXAMPLES OF FOSSIL FUEL ENERGY

#### Natural Gas

Despite its innocent-sounding name, natural gas is a dirty fossil fuel composed primarily of methane, a greenhouse gas that is [80 times](#) more potent at trapping heat in our atmosphere than carbon dioxide (over a 20-year period).

The danger of natural gas isn't just that burning it releases carbon dioxide, which traps heat and drives climate change. Many natural gas pipelines and other facilities leak methane into the air, which helps raise global temperatures and change our climate even without burning.

Another danger of natural gas? It is frequently produced through fracking (or hydraulic fracturing). In fracking, [the BBC explains](#), "Water, sand and chemicals are injected into the [underground] rock at high pressure which allows the gas to flow out to the head of the well."

Studies have found that fracking is [one of the least sustainable ways to produce electricity](#), and the chemicals used in the process can have devastating impacts on our water and health.

### **Petroleum (Oil)**

Petroleum starts as crude oil, a typically black liquid found in underground reservoirs or closer to the surface in tar sands or pits. To extract oil, companies usually drill wells deep underground, both on land and under the sea.

After crude is refined into petroleum, it's used for gasoline to power the combustion engines in vehicles as well as generators and power plants. When oil is burned, it releases carbon dioxide that traps heat in the atmosphere, fueling climate change.

Plus, accidents can happen at every step and everywhere from wells to pipelines. The result can be oil spilling onto the land or water, devastating the local environment – and frequently the economy of communities nearby. And oil spills happen all the time – by some estimates, between 2010 and 2016, there were [1300 pipeline spills in the US](#) (or about one every other day).

### **Coal**

Coal is a dark sedimentary rock that is highly combustible and is burned to generate electricity. Coal comes from ancient plant material that decays and – with an enormous amount of time, heat, and pressure — turns into the more-solid rock we know today.

When it comes to the climate, coal is Public Enemy Number One. Worldwide, more of the carbon pollution driving climate change [comes from burning coal than](#) any other source.

But as with other fossil fuels, the dangers don't end there. Coal is also [devastating for public health](#), with air pollution from burning coal causing thousands of hospitalizations and premature deaths each year. The industry tries to pretend coal is safe by using the term “clean coal” – but [there is no such thing](#).

## **WHAT YOU NEED TO KNOW ABOUT FOSSIL FUELS**

### **FOSSIL FUELS COST MORE THAN THE MARKET PRICE.**

Burning fossil fuels drives climate change. And climate change carries tremendous costs for all of us, from the tax dollars to rebuild communities to the human costs of hurricanes, droughts, and floods made worse by the climate crisis.

More often than not, the market prices of fossil fuels don't reflect this reality. Government subsidies for the industry and lack of accountability for its role in climate change mean fossil fuel prices stay artificially low. This tells fossil fuel companies that they can dump unlimited carbon pollution into the atmosphere without any consequences.

The rest of us can't afford to keep footing the bill. That's why there is a growing movement to make these Big Polluters pay the true cost of fossil fuels – it's called carbon pricing.

## **RENEWABLE ENERGY IS A BETTER ALTERNATIVE**

Renewable energy (think wind and solar) gives us a reliable and cost-effective way to power our lives and our economies without releasing dangerous carbon pollution. Plus, renewables can save us money. In many parts of the world, they already cost the same or less than fossil fuels.

**It's clear:** We must transition away from dangerous, dirty fossil fuels and invest in clean, reliable energy. Renewable energy is good for our health, our climate, and our economies.